

FLS M9.46



pH/ORP Monitor and Transmitter with Modbus communication



FLS M9.46

The FLS M9.46 is designed for industrial applications requiring precise and reliable pH and ORP measurements. Integration of the Modbus protocol ensures real-time data access and secure connectivity, enabling advanced monitoring and optimized process control.

The large 4" graphic display with high-brightness backlight provides clear readings even from a distance, displaying complete information on measurement status.

Calibration with automatic buffer recognition and in-line adjustment guarantees accuracy under all operating conditions.

The 4-20 mA analog output enables data transmission to remote systems, while the digital SSR output allows fast and reliable activation of high and low alarms, ensuring process protection and safety.

PH/ORP MONITOR AND TRANSMITTER WITH MODBUS COMMUNICATION

APPLICATIONS

- Water treatment and regeneration
- Industrial wastewater treatment and recovery
- Scrubber control
- Neutralisation systems
- Heavy metal recovery
- Coating of metal surfaces
- Processing and manufacturing industry
- Chemical production
- Swimming pools and spas

MAIN CHARACTERISTICS

- Large display with backlight
- Automatic recognition of buffers for pH
- Modbus RTU communication (RS485)

TECHNICAL DATA

General information

Compatible sensors: pH/ORP electrodes and temperature sensors

Materials:

- Case: ABS
- Display: PC
- Panel and wall gasket: silicone rubber
- 5-button keyboard: silicone rubber

Display:

- Transflective technology
- Update rate: 1 second
- Protection class: IP65 front

pH input range: -2÷16 pH (depending on the pH electrode applied)

pH measurement resolution: ±0.01 pH

ORP input range: -2000÷2000 mV (depending on the ORP probe applied)

ORP measurement resolution: ±1 mV

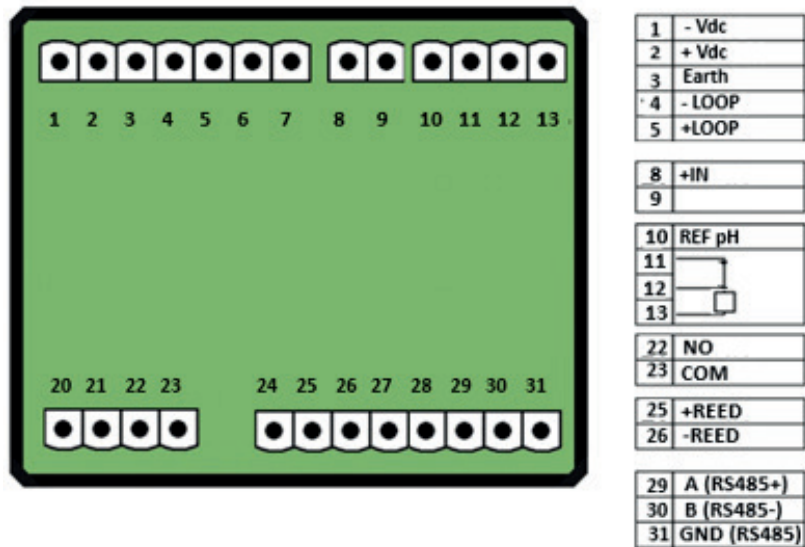
Temperature input range: 0÷-100 °C (32÷212 °F) (with Pt100-Pt1000)

Temperature measurement resolution: 0.1°C/°F (Pt1000); 0.5°C/°F (Pt100)

Electrical data	Supply voltage: from 12 to 24 VDC $\pm 10\%$ regulated
	Max electrical consumption: < 300 mA
Environmental data	current output: – 4–20 mA, isolated, fully adjustable and reversible – Max loop impedance: 800 Ω @ 24 VDC – 250 Ω @ 12 VDC
	1 solid state relay output: – User settable as MIN-MAX alarm – Optically isolated, 50 mA max sink, 24VDC pull-up voltage – Hysteresis: user selectable
	1 Modbus RTU: – RS485 Serial Communications
	Operating temperature: from -10°C to 70°C (from 14°F to 158°F) Storage temperature: from -30°C to $+80^{\circ}\text{C}$ (from -22°F to $+176^{\circ}\text{F}$) Relative humidity: from 0 to 95% not condensing
Standards & Approvals	Manufactured under ISO 9001 Manufactured under ISO 14001 CE RoHS Compliance EAC

ELECTRICAL CONNECTIONS

Rear view of electrical connections



PRODUCT CODES



M9.46.PX – M9.46.WX

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Code	Mounting	Power supply	wires power Technology	Sensor Input	Modbus RTU	Output	Weight (gr.)
M9.46.P1	Panel	12 - 24 VDC	3/4 wires	pH/ORP Temperature	RS 485	1 (4-20 mA) 1 (S.S.R.)	550
M9.46.W1	Wall	12 - 24 VDC	3/4 wires	pH/ORP Temperature	RS 485	1 (4-20 mA) 1 (S.S.R.)	650
M9.46.W2	Wall	110 - 230 VAC	3/4 wires	pH/ORP Temperature	RS 485	1 (4-20 mA) 1 (S.S.R.)	750